REMARKS

Claims 2, 3, 16-12 and 14 are pending in the Application. Claims 13 and 14 have been amended. Support for the amendment to Claim 14 is found in the specification as filed. No new matter has been added.

REJECTION UNDER 35 USC 112, second paragraph

Claim 13 stands rejected under 35 USC 112, second paragraph. The rejection should be withdrawn in view of the modifications above and remarks below.

Claim 13 has been amended to depend from Claim 14. Reconsideration is requested.

REJECTION UNDER 35 USC 103

Claims 2, 3, 6-12 and 14 stand rejected under 35 USC 103. The rejection should be withdrawn in view of the modifications above and remarks below.

Claim 14 has been amended and is related to a layer arrangement comprising:

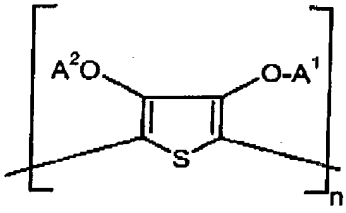
(a) at least one transparent substrate having an electrically conductive layer,

(b) an electro-optically active layer,

(c) an additional substrate having an electrically conductive layer, and

wherein at least one of the two electrically conductive substrates is coated with an organic conductive polymer system based on polythiophenes;

wherein the organic conductive polymer system is a cationically charged polythiophene comprising structural units of the formula (I)



(I)

wherein

A^1 and A^2, independently of one another, are optionally substituted (C_1-C_{18})-alkyl or together form optionally substituted (C_1-C_{18})-alkylene, and

n is an integer from 2 to 10,000,

in the presence of anions or polyanions.

wherein the organic conductive polymer system is arranged adjacent to the electrical conductive layer.

The Office Action alleges that Broer et al:

> ...does not disclose that the organic conductive polymer system is a cationically charged polythiophene with the claimed structural units in a polyanion or anion. Tahon et al teaches of using polythiophene with the claimed structural units in a polyanion for the purpose of forming an alignment layer to align liquid crystals (Abstract and Sections 16-25, and 34-38). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made for the liquid crystal layer arrangement of Broer et al to further include the organic conductive polymer system is a cationically charged polythiophene with the claimed structural units in a polyanion or anion since Tahon et al teaches of using polythiophene with the claimed structural units in a polyanion for the purpose of forming an alignment layer to align liquid crystals. (Office Action, page 3, lines 12-21).

Applicants' invention solves the problem associated with the disadvantage of known conductive layers e.g. indium-tin oxide (ITO) (Specification, page 2, line 13-24). ITO layers typically have a rough surface structure. This is due to the manufacturing process during which ITO is evaporated by different techniques and then condensed on the substrate surface.

Applicants found that the conductive polymer film, for example, of the thiophene according to formula 1, on top of the ITO layers smooths out the rough surface. Thus, elimination of electrical short-circuits between the first conductive layer on the first substrate and the second conductive layer (of the second substrate) which is beyond the electro-optically active layer occurs. A display using an electroluminescent layer as electro-optically active layer would remain black at those points where a short-circuit appears.

Applicants' invention novel combination of the electrically conductive layer with the conductive polymer layer avoids such short circuits. The minimization of surface roughness of the ITO layer is shown in the examples (Specification, page 10).

A further problem of conventional conductive layer is brittleness. Such layers may easily build cracks that interrupt an electrical current through such layers, even if the substrate which is bent is made of a flexible material (e.g. Polycarbonate).

With the conductive polymer (polythiophene) of Applicants' invention, on top of the conductive layer, a crack in the first conductive layer would be by-passed by the more flexible conductive polymer film.

Neither Broer et al nor Tahon et al, alone or in combination, teach solving the problems that Applicants' invention does or suggest a combination of conventional conductive layers and the conductive polymer layer. Regarding Broer et al, Broer et al does not mention the polythiophene layer. Regarding Tahon et al, the Office Action alleged that Tahon et al uses polythiophene layer to form an alignment layer to align the liquid crystals. However, the structure, including alignment, of Tahon et al is obviously different from Applicants' multi-layer arrangement, and therefore one skilled in the art would not combine the references practice Applicants' invention, including the conductive polymer layer on the other electrically conductive layer. Reconsideration is requested.

In view of the above amendments, Applicants submit that the claims are in condition for allowance and the Examiner would be justified in allowing them.

Respectfully submitted,

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